CE

Automatic Systems

TR490 Tripod Turnstile

INSTALLATION MANUAL

Automatic Systems s.a.

Head office & factory:

Avenue Mercator 5, 1300 Wavre, Belgium

Tél.: 32-10-23.02.11 Fax: 32-10-23.02.02

Automatic Systems reserves the right to change the characteristics of its products without notice.

Table of contents

1. INTRODUCTION ..... p. 3

2. GENERAL ..... p. 4

2.1. General view ..... p. 4
2.2. Switching off the equipment ..... p. 5
2.3. General conditions of use ..... p. 5
2.4. In case of power failure ..... p. 5
2.5. Overall dimensions and installation plan ..... p. 6

3. INSTALLATION ..... p. 7

3.1. First step ..... p. 7
3.2. Preliminary work on site ..... p. 8
3.3. Installing the tripod turnstile ..... p. 8
3.4. Mounting the tripod arms ..... p. 9
3.5. Electrical connections and initial power-up ..... p. 10
3.6. Check list ..... p. 11
3.7. Temporary dismantling ..... p. 11
3.7.1. Disconnecting the equipment ..... p. 11
3.7.2. Dismounting the tripod arms ..... p. 11
3.7.3. Removing the unit ..... p. 11
3.8. Scrapping the equipment ..... p. 11

4. ANNEX: ELECTRICAL DIAGRAM (standard version: diagram Automatic Systems STD 1TR6 04.001)

1. INTRODUCTION

We thank you for choosing the TR490 electrical tripod turnstile designed and manufactured by Automatic Systems. We are confident that your purchase will fully meet your requirements. However, in order to obtain maximum satisfaction from this equipment for a maximum period of time, we strongly advise you to read this manual carefully before installing the equipment.

Although this manual has been prepared with great care, some information may seem erroneous or unclear to you. In this case, please do not hesitate to contact us with your remarks or questions.

WARNING:

YOUR TR490 TRIPOD TURNSTILE COMPRISES A MECHANISM AND VARIOUS ELECTRICAL COMPONENTS. ANY NEGLIGENCE DURING AN INTERVENTION IN THE MACHINE MAY SERIOUSLY ENDANGER YOUR SAFETY. AS SOON AS YOU OPEN THE HOUSING, PUT OFF THE MAIN SWITCH (**2:1**) ON THE ELECTRICAL CONTROL LOGIC (**2:2**), LOCATED UNDER THE HOOD. BE CAREFUL IN HANDLING ANY INTERNAL ELEMENT WHICH MIGHT BE UNDER POWER OR COULD BE SET IN MOTION.

WHEN WORKING ON THE CIRCUITS, IT IS RECOMMENDED:

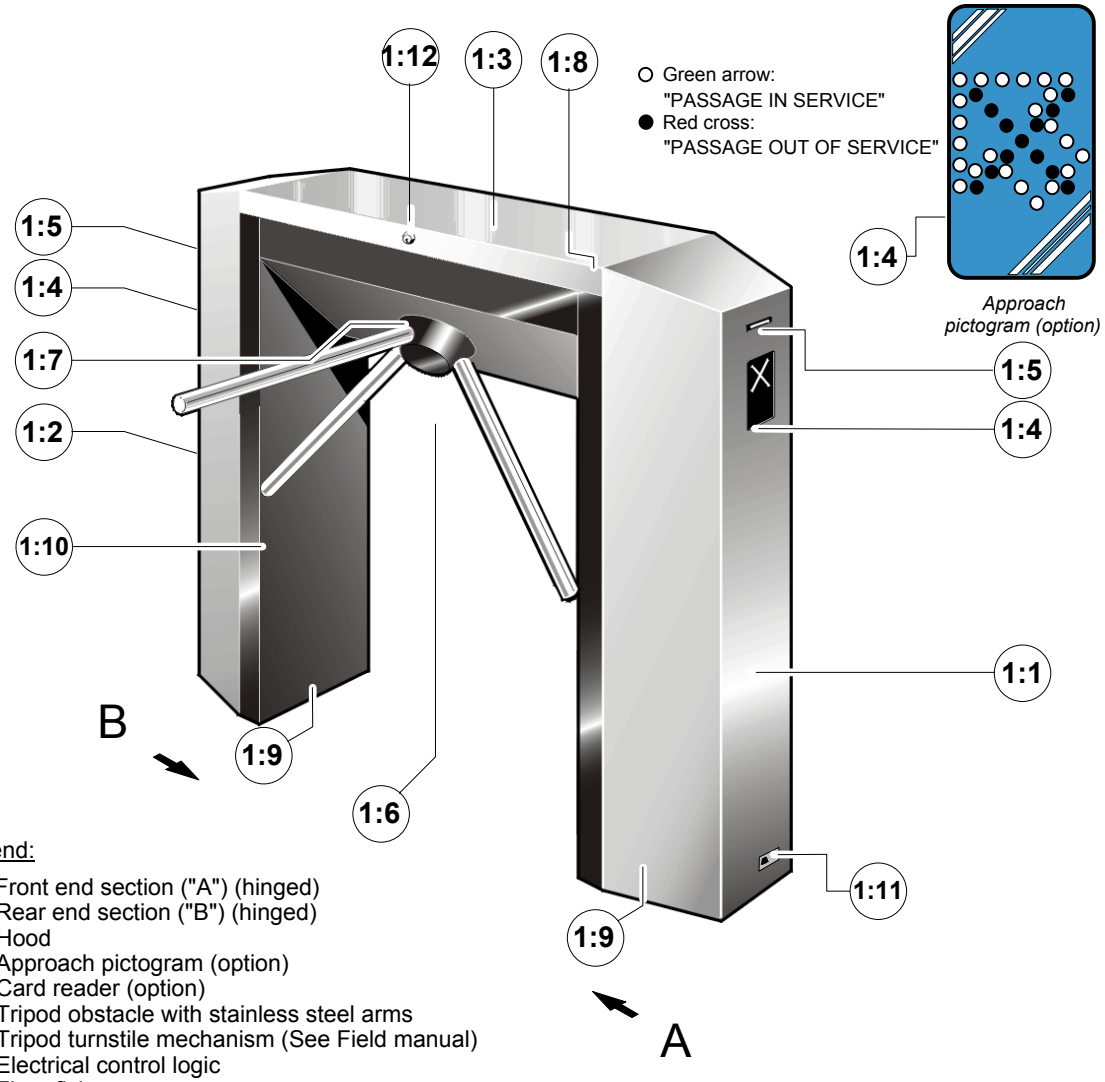
- NOT TO DISCONNECT WIRES WITHOUT MARKING THEIR TERMINALS;
- NOT TO REMOVE THE CONNECTOR WITHOUT MARKING ITS PRECISE POSITION

IMPORTANT

BECAUSE OF THE SHOCKS THE TURNSTILE COULD CAUSE, WE ADVISE YOU TO PROHIBIT THE ACCESS TO UNACCOMPANIED YOUNG CHILDREN AS WELL AS TO ANIMALS.

2. GENERAL

2.1. General view



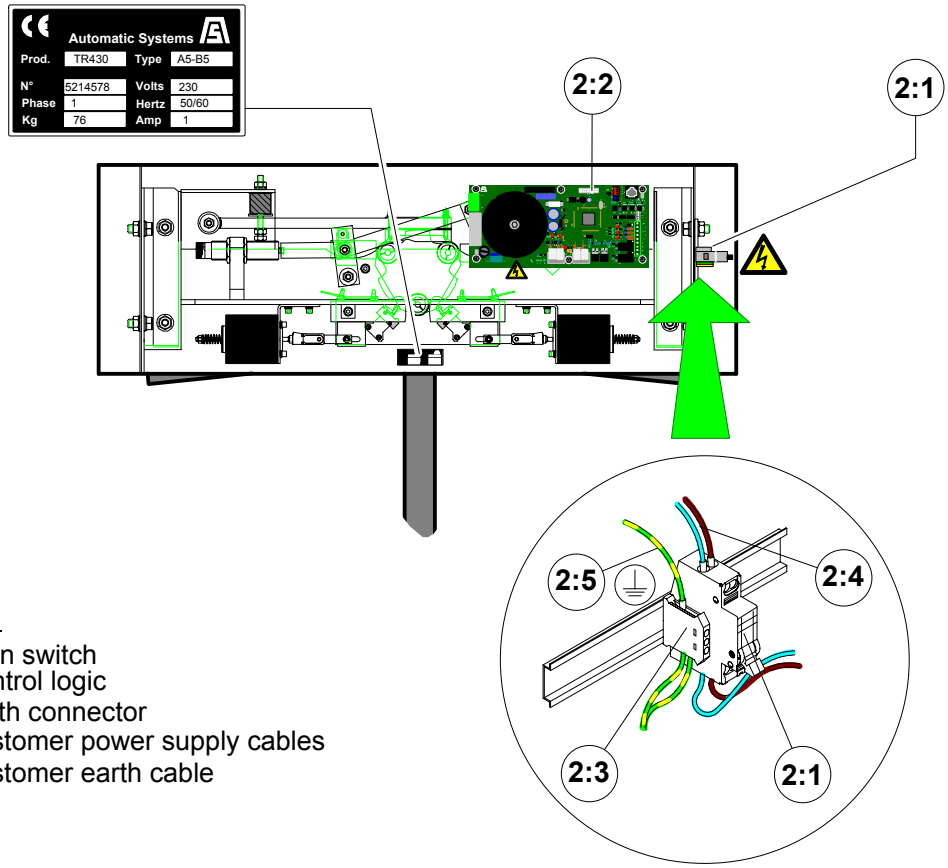
Legend:

1:1 Front end section ("A") (hinged)
1:2 Rear end section ("B") (hinged)
1:3 Hood
1:4 Approach pictogram (option)
1:5 Card reader (option)
1:6 Tripod obstacle with stainless steel arms
1:7 Tripod turnstile mechanism (See Field manual)
1:8 Electrical control logic
1:9 Floor fixing
1:10 Steel housing
1:11 Commercial identification plate
1:12 Lock

Fig. 1

Note:	*Conventionally and as a general rule, the user will be considered in direction "A" when the turnstile is at his right-hand side, in direction "B" when the turnstile is at his left-hand side.*

2.2. Switching off the equipment



Legend:

2:1 Main switch
2:2 Control logic
2:3 Earth connector
2:4 Customer power supply cables
2:5 Customer earth cable

Fig. 2

- As soon as you open the housing, put off the main switch (**2:1**) near the electrical control logic (**2:2**), located under the hood.

2.3. General conditions of use

- Your TR490 tripod turnstile has been designed to operate in any climatic environment, from -20°C to +60°C, with up to 90% of relative humidity

2.4. In case of power failure

- Depending on which control mode the tripod is set up for, the TR490 tripod turnstile can release the mechanism in either direction or in both, when the electrical power supply is interrupted. This unlocking principle in an emergency situation is called the "anti-panic" device. Refer to *paragraph [3.2. Principle of operation]* in the Field manual for more information.

2.5. Overall dimensions and installation plan

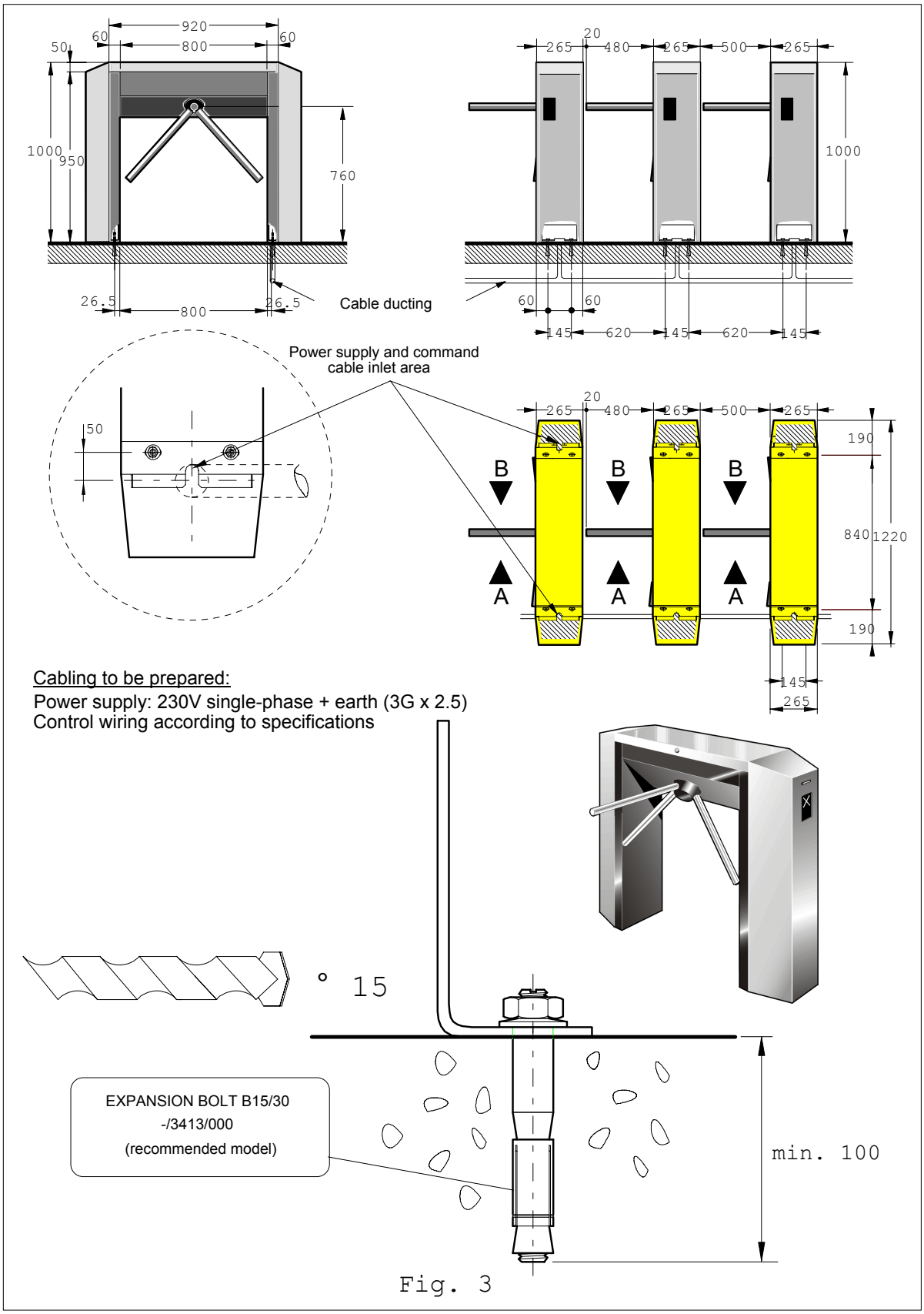


Fig. 3

3. INSTALLATION

3.1. First step

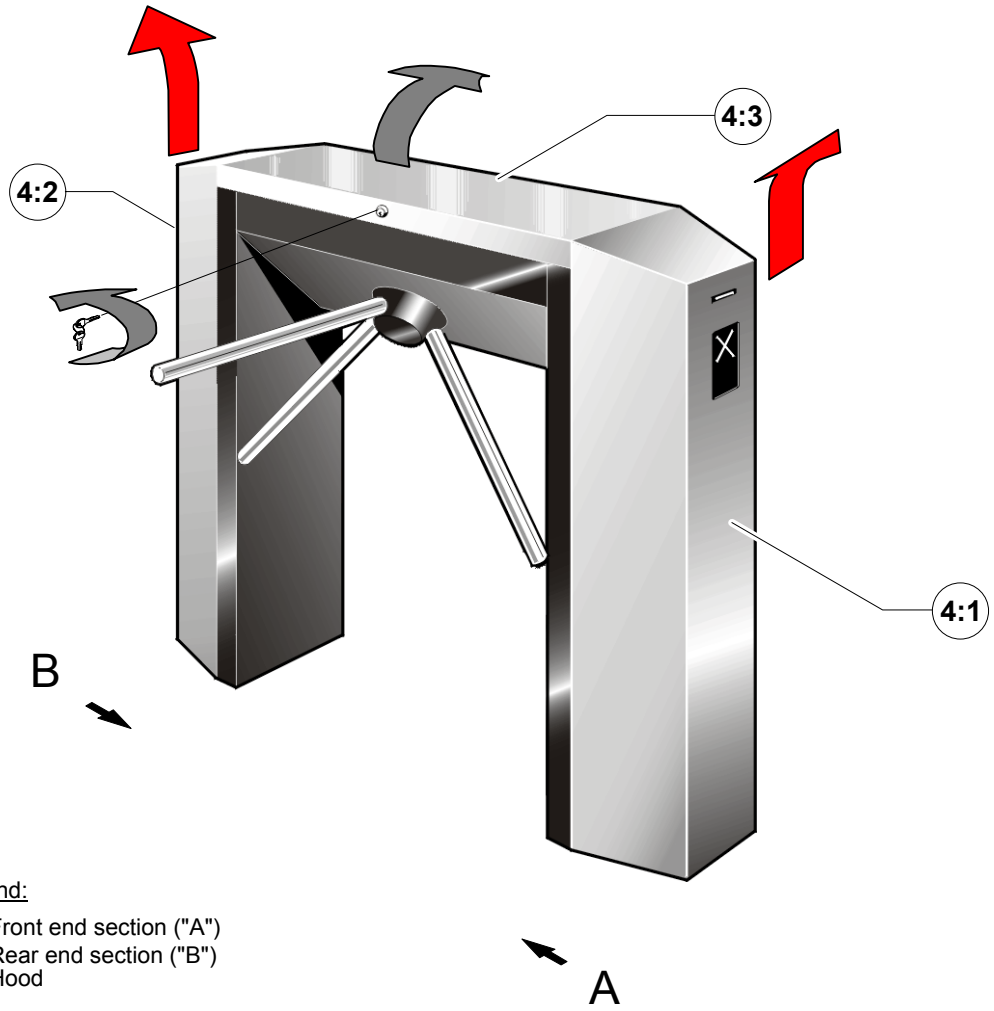


Fig. 4

- The tripod turnstile has been packaged suitable for transport. Move the material to the installation site with the assistance of a fork-lift, or manual hand truck and remove the packing material.
- Unlock (**4:4**) and open the hood (**4:3**). Keys are supplied as accessories in a separate bag.
- Raise and remove the front columns (**4:1**) et (**4:2**).
- Check the state of the material. Though it has been carefully packed, damage may have occurred during transport. Any transportation damage should be repaired, or components replaced.

3.2. Preliminary work on site

- This is basically the following:
  - ◆ Check the positioning and location of the equipment according to the site's general lay-out.
  - ◆ Drill holes in the ground as in Fig. 3 (page 6/11). Make sure to drill holes with the diameter adapted to the expansion bolts that will be used (recommended type: model B15/30, ref. -/3413/000)..
  - ◆ Make sure that cables come out at a distance of 50 mm of the fixing holes.
  - ◆ Prepare power supply wiring (230V single-phase + earth, 3Gx2.5) and control cabling (not supplied). All cables must have a 2 meter tail.

Note:	*If you add any flammable elements (see EN60950, paragraph 4.4.5. standard) into the end sections of the turnstile, make sure that the floor is fireproof.*

3.3. Installing the tripod turnstile

- Position the turnstile on site precisely.
- Tighten the expansible bolts in order to fix the turnstile on the ground. Make sure that cables are not trapped.
- When the turnstiles are fitted in rows of more than 1 unit, attention should be given to the linear, vertical and horizontal alignment. Packing shims can be used.

3.4. Mounting the tripod arms

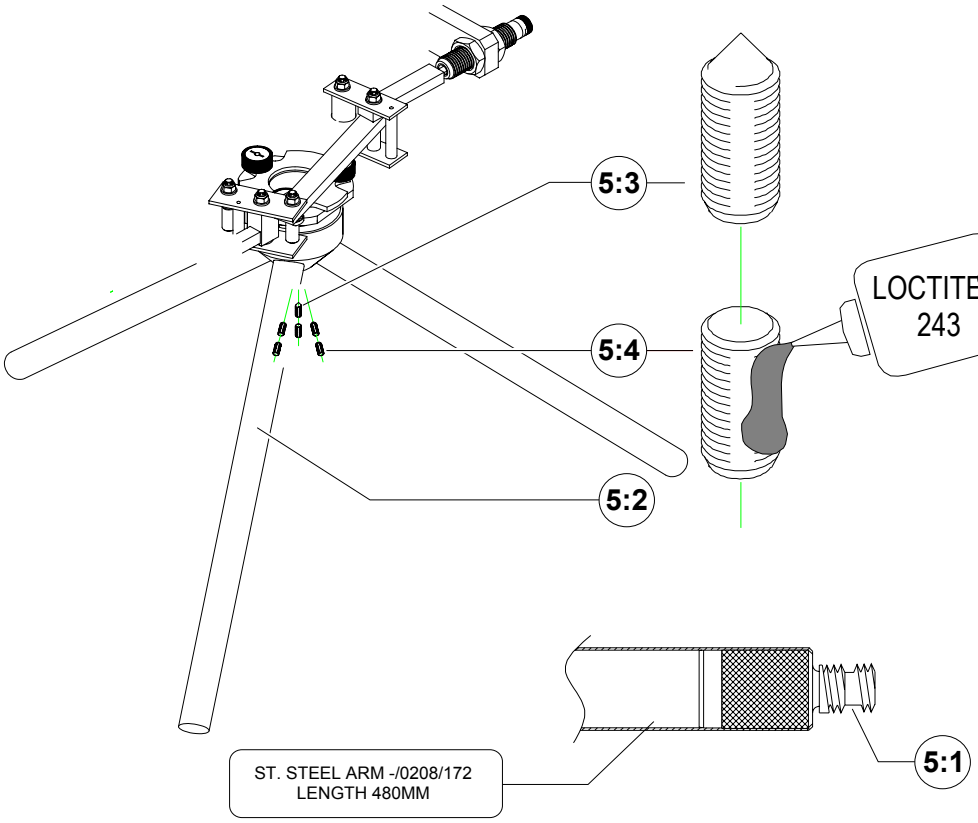


Fig. 5

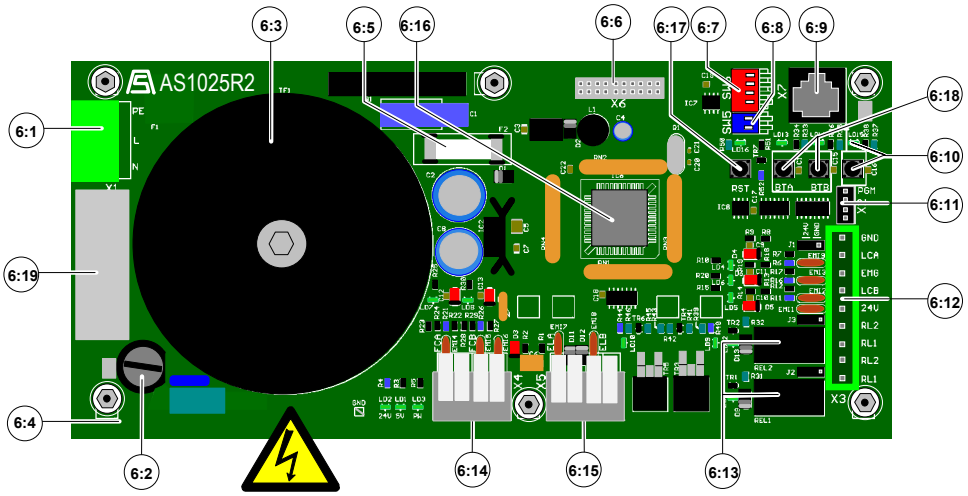
- Remove the grease from the thread (**5:1**) of the arms (**5:2**) with trichlorethylene (care must be taken when using any substance or chemical that can be harmful, refer to the manufacturer's information and/or a Health & Safety "Risk Assessment") and apply some Loctite® 243 (blue) or an equivalent industrial bonding adhesive on the thread.
- Screw the arms into the central hub, turn them clockwise and tighten them firmly with the help of a strap tube-wrench.
- For each of the arms, fix the conic-end screw (**5:3**) and tighten it firmly. The screws are supplied as accessories in a separate bag.
- Apply a drop of Loctite® 243 (blue) on the thread of the flat-end screw (**5:4**) and tighten this firmly to lock the conic-end screw (**5:3**).

3.5. Electrical connections and initial power-up

- The electrical connections must be made according to the diagram affixed inside the housing.
  - ⇨ Make sure that the power supply cables are not live. All internal connections are factory-made.
  - ⇨ If necessary, cut off the excess cable length. Connect the 230V single-phase power supply wires (**2:4**) to the terminals on the main switch (**2:1**), and the earth wire (**2:5**) to the adjoining terminal (**2:3**). Make sure the equipment is correctly earth bonded (housing & associated metalwork).
  - ⇨ Proceed with all other electrical connections depending on the equipment specifications (control wiring, etc.).
  - ⇨ Route all cables via the cable entry holes and secure in the cable fastenings provided, ensuring that they are held clear of the turnstile mechanism's moving parts.
  - ⇨ After the power supply from the remote isolator has been energised, test for correct polarity, supply voltage and earthing, power up the equipment by putting the main switch (**2:1**) to the ON position.

Note: *When the turnstile is connected to an IT power system, a 2A two pole circuit breaker must protect the 230V power supply.*

TR6 CONTROL LOGIC



AS1025 board

1. 230V main power supply connector
2. Fuse 1: T500mAL 250V (230V power supply)
3. 60VA multivoltage transformer
4. AS1025 board
5. Fuse 2: T2AL 250V (24VDC voltage)
6. I2C expansion connector
7. Parameter programming DIP switches
8. DIP switches for selecting operation mode and programming parameters
9. "AS-LINK" connector for programming console
10. Programming push button and LED
11. RS232 line TTL 5V level
12. Customer input/output connector
13. Signal relay
14. Direction A and B limit switches connector
15. Direction A and B electromagnets connector
16. Application microcontroller
17. Microcontroller reset button
18. Direction A and B simulation buttons
19. 230V power supply filter

Fig. 6

3.6. Check-list

❒ Before commissioning the tripod turnstile, proceed with the various mechanical tests as described in the Field manual *paragraph [2.1. First service at 50,000 cycles]*, then the electrical ones (proper operation of the optional readers, pictograms, etc.). In case of a mechanical problem, please refer to the corresponding paragraph.

❒ Check if all wires are firmly connected to their respective terminal blocks.

❒ Check if the tripod arms can be pushed freely if the equipment is powered off, in case a mechanism type 3 or type 5 is installed (anti-panic device).

❒ Check if all screws and nuts have been tightened firmly.

❒ Inspect the inside of the turnstile to ensure no tools remain, to cause equipment failures.

❒ Remove any foreign body from the inside of the gate (packing, debris, etc.), and clean it.

❒ Replace and lock the hood (**4:1**).

-- The tripod turnstile is now operational. Although all adjustments have been carried out in our factory, a final adjustment may be required, following transportation and installation of the equipment. In this case, refer to the Field manual.

3.7. Temporary dismantling

- If the equipment has to be temporarily dismantled, e.g. if you need to change its location, follow the procedure below.

3.7.1. Disconnecting the equipment

-- Unlock and remove the hood (**4:1**).

-- Make sure that the power supply cables are not live.

-- Put off the main switch (**2:1**) on the electrical control logic.

-- Disconnect the power supply wires (**2:4**) from the main switch (**2:1**) as well as the earth cable (**2:5**).

-- Disconnect any other cabling (control wires, etc.).

3.7.2. Dismounting the tripod arms (if required)

-- Remove the flat-end screw (**5:4**) and the conic-end screw (**5:3**) from the arms (**5:2**).

-- With the help of a strap tube-wrench, turn the arms counter-clockwise to unscrew them.

3.7.3. Removing the unit

-- Loosen the four fixing screws.

-- Free the turnstile.

-- Loosen the four expansion bolts.

-- Using manual handling or fork-lift truck, remove the tripod turnstile.

3.8. Scrapping the equipment

- When the equipment is withdrawn from use, proceed with the dismantling procedure as described in *paragraph [3.7. Temporary dismantling]*. Ensure that the various components of the equipment (metals, electrical components, plastics, etc.) are handled, recycled, or disposed of in the appropriate method, to comply with regulations and codes of practice in the country where the unit is to be scrapped.